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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/750,839

01/05/2004

Yoon-seop Eom

1293.1940

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7590

10/02/2007

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EXAMINER

TYLER, NATHAN K

ART UNIT

PAPER NUMBER

2625

MAIL DATE

DELIVERY MODE

10/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/750,839	Applicant(s) EOM, YOON-SEOP	
	Examiner Nathan K. Tyler	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12-22, 24-27 and 29-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-22, 24-27 and 29-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed 09 July 2007, with respect to the drawings have been fully considered and are persuasive. The objection to the drawings has been withdrawn.
2. Applicant's arguments with respect to claims 24 and 34 have been fully considered and are persuasive. The objection to claims 24 and 34 under 37 CFR 1.75(a) has been withdrawn.
3. Applicant's arguments with respect to claim 33 have been fully considered but they are not persuasive. It appears that claim 33, although labeled "amended," has not been amended.
4. Applicant's arguments with respect to the Hewitt reference have been considered but are moot in view of the new grounds of rejection.

Claim Objections - 37 CFR 1.75(a)

5. The following is a quotation of 37 CFR 1.75(a):

The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

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6. Claim 33 is objected to under 37 CFR 1.75(a) as failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention or discovery.

Regarding **claim 33**, the term “the first image processor” at line 1 lacks an antecedent basis. However, it appears from the context of the claim when read in light of the specification that “the first image processor” is in fact referring to the “first data image generator” first introduced at line 2 of claim 26; and this will be assumed for examination purposes.

Additionally, the term “the second image data processor” at line 2 lacks an antecedent basis. However, it appears from the context of the claim when read in light of the specification that “second image data processor” is in fact referring to the “second image generator” first introduced at line 4 of claim 26; and this will be assumed for examination purposes.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 4, 6, 7, 8, 11, 12, 13, 16, 18, 19, 20, 23, 25, 26, 27, 28, 29, 30, 32, 33, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Hewitt (GB 2371386 A).

Regarding **claims 1, and 13**, Hewitt discloses a color image forming method and corresponding apparatus ("Related factors include... color depth (or bits per pixel for monochrome grayscale or side band cases)" at page 6, line 38. Monochrome data is presented as an alternate embodiment, this indicates that Hewitt's preferred embodiment operates on color image data) that is connected to a host computer and which receives image forming data generated in the host computer, comprising: generating first image data image-processed into a format suitable for use in a color image forming engine by a first image processor disposed within the color image forming apparatus (Fig. 1, numeral 24: "Formatter." "the printer formatter 24 includes all the necessary hardware and firmware required to convert a print job PDL file to a HRB file" at page 6, line 7); generating second image data image-processed into a format suitable for use in the color image forming engine by a second image processor disposed outside the color image forming apparatus (Fig. 1, numeral 22: "RIP Engine." "Host computer 12 also includes... a formatter or RIP engine 22 including all the necessary hardware and firmware required to convert a print job PDL file to a hardware ready bits (HRB) file" at page 6, line 1); and receiving at least one of the first and the second image data and selectively outputting the received at least one of the first and second image data to the color image forming engine via an image data controller disposed within the first image processor (Fig. 2: "Language Firmware" 48, which is located within image processor 24 "printer formatter," receives at least one of the first and second image data (the first image data output by language firmware 46) and selectively outputs the first image data to the print engine 26).

Regarding **claims 4 and 16**, Hewitt discloses that the first image processor is slower than the second image processor (“Typically, the host computer 12 will have greater processing power [than the printer]” at page 11, line 11).

Regarding **claims 6 and 18**, Hewitt discloses that the second image processor operates according to a page description language (PDL) format (“RIP engine 22 including all the necessary hardware and firmware required to convert a print job PDL file to a hardware ready bits (HRB) file” at page 6, line 3).

Regarding **claims 7 and 19**, Hewitt discloses that the second image processor has a video controller which operates according to the PDL format (Fig. 2: image processor 22 includes elements 38, 40, 42, and 44, which together perform the same functions as those performed by applicant’s “video controller” as disclosed, and which operate according to a PDL format. See above grounds for rejection).

Regarding **claims 8 and 20**, Hewitt discloses driving, via the color image forming engine, mechatronics to form the color image (“the imaging device 14 is in the form of a laser printer 14 that employs an electrophotographic drum imaging system” at page 5, line 15).

Regarding **claims 12, 25, and 33**, Hewitt discloses that the second image processor is slower than the first image processor (the second image processor is slower than the first image processor when step 102 of Fig. 4 is carried out; see page 11, lines 26-33).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 2, 14, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hewitt and Ip (US 5600804 A).

Regarding **claims 2 and 14**, while Hewitt discloses the limitations of claims 1 and 13, from which claims 2 and 14 depend respectively, Hewitt does not disclose that the second image processor is a system expansion card which is insertable into the host computer.

Ip discloses an image processor that is a system expansion card which is insertable into a host computer (Fig. 2, numeral 27 "option board." "Option boards may also include... rasterizer boards so as to permit rasterization of page description language commands" at column 3, line 24).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to place the second image processor in the host computer taught by Hewitt on a removable system board as taught by Ip, so that the second image processor taught by Hewitt may be upgraded, or more easily/cheaply replaced in the event of failure.

11. Claims 3, 15, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hewitt and Ferlitsch (US 20040061892 A1).

Regarding **claims 3, 15, and 24**, while Hewitt discloses the limitations of claims 1 and 13, from which claims 3 and 15 depend respectively, Hewitt does not disclose that the second or first image processor is externally attached to the host computer or the image forming apparatus, respectively.

Ferlitsch discloses that the second image processor is externally attached to the host computer and the image forming apparatus (Fig. 11, "RIP Server" 150 externally attached to host computer "Client" 130 and image forming apparatus "Printer" 120).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to move either of the first or second image processors taught by Hewitt to an externally attached server as taught by Ferlitsch, in order to remove the load of processing from the host computer or the printer's CPUs ("this configuration concentrates the resources needed for rasterization in one device that is capable of offloading raster processing from a number of clients and printers" at Ferlitsch paragraph 30, line 9).

12. Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hewitt and Karaki (US 5699492 A).

Regarding **claims 5 and 17**, while Hewitt discloses the limitations of claims 4 and 16, from which claims 5 and 17 depend respectively, Hewitt does not disclose that the first image processor operates according to a graphic device interface (GDI) format.

Karaki discloses a rasterization processor that operates according to a GDI format (Fig. 1, rasterizer 17 and accompanying elements 15 and 19 operate on data from "GDI Module" 9).

As the system disclosed by Hewitt rasterizes data to be used by a print engine, it would have been obvious at the time the invention was made to one of ordinary skill in the art to use the rasterization processor disclosed by Karaki as either the first or second image processor taught by Hewitt. This would allow the Hewitt system to rasterize data in a GDI format without the need for a higher level page description language, as GDI is native to the Microsoft Windows operating system and is very common ("MS-Windows by Microsoft Corp. is used as the operating system 7. This operating system 7 includes a graphic device interface... The GDI module 9 supplies the application 5 with a common graphic device interface (GDI) which is prescribed for the convenience of application development and which does not depends [sic] on output devices" at Karaki column 3, line 45).

13. Claims 9, 10, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hewitt and Sugisaki et al (US 5681642 A).

Regarding **claims 9, 10, 21, and 22**, Hewitt discloses that the first and second image processors generate data suitable for use by a color electrostatic image forming device. Hewitt does not disclose that the first or second image processor generates image data suitable for one of a single path mode and a multi-path mode of forming a color image.

Sugisaki discloses a color electrostatic printing system that uses a single path mode and a multi-path mode ("Usual recording system of color electrostatic plotter includes the single path system provided with four multineedle electrode heads (cyan, magenta, yellow and black) and respective developing devices and the multipath system provided with one multineedle electrode and four developing devices corresponding to said respective colors" at column 1, line 27).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to have the first and second image processors taught by Hewitt generate data suitable for use in the single- and multi-path mode electrostatic printing system taught by Sugisaki, as the single- and multi-path modes of forming an image in an electrostatic color printer are well known and readily available ("Usual recording system of color electrostatic plotter includes the single path system... and the multipath system" at Sugisaki column 1, line 27).

14. Claims 26, 27, 29, 30, and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hewitt and Currans et al. (US 7242492 B2).

Regarding **claim 26**, Hewitt discloses a color image forming system comprising: a color image forming apparatus having therein a first image data generator which generates first image data (Fig. 2, numeral 50: "RIP"); a second image data generator which generates second image data and is external to the color image forming apparatus (Fig. 2, numeral 38: "RIP"); an image data controller which receives the first and the second image data, selectively outputs the first and the second image data (Fig. 2, numeral 28: "Printer I/O" selectively determines whether the Print Engine will output the first image data or second image data); and a color image forming engine which receives the first and the second data from the image data controller and which is disposed in the color image forming apparatus (Fig. 2, numeral 26: "Print Engine").

Hewitt does not explicitly disclose that the image data controller is disposed in a first image processor that includes the first image data generator.

Currans teaches that it is known in the art to combine the capabilities of several functional units in a printer, including an image data generator, into one hardware unit (Fig. 4,

several functional blocks, including "formatting unit" 308 controlled by common "control circuitry" 412).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to combine the image data controller and image data generator disclosed by Hewitt into one functional hardware unit (a first image processor) as taught by Currans in order to cut costs by decreasing the number of physical chips used in the printer.

Regarding **claim 27**, the combination of Hewitt and Currans as applied to claim 26 discloses a first image processor in which the first image data generator is disposed (see grounds for rejection for claim 26).

Regarding **claim 28**, the combination of Hewitt and Currans as applied to claim 26 discloses a first image processor in which the image data controller is disposed (see grounds for rejection for claim 26).

Regarding **claim 29**, Hewitt discloses a second image processor in which the second image data generator is disposed (Fig. 2, numeral 22: "RIP engine").

Regarding **claim 30**, Hewitt discloses a host computer in which the second image processor is disposed (Fig. 2, numeral 12: "host computer").

Regarding **claim 32**, Hewitt discloses an engine mechatronics unit, wherein the color image forming engine includes an engine controller which receives the first and the second image data and which controls the engine mechatronics unit to form an image ("the imaging device 14 is in the form of a laser printer 14 that employs an electrophotographic drum imaging system" at page 5, line 15).

Regarding **claim 34**, Hewitt discloses that the second image generator is faster than the first data image generator ("Typically, the host computer 12 will have greater processing power [than the printer]" at page 11, line 11).

15. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hewitt and Currans as applied to claim 26 above, and further in view of Ip.

Regarding **claim 31**, while Hewitt discloses the limitations of claim 30, from which claim 31 depends, Hewitt does not disclose that the second image processor is a system expansion card insertable into the host computer.

Ip discloses a second image processor that is a system expansion card insertable into a host computer (see above grounds for rejection).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to place the image processor in the host computer taught by Hewitt on a removable system board as taught by Ip (see grounds for rejection for claims 2 and 14).

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

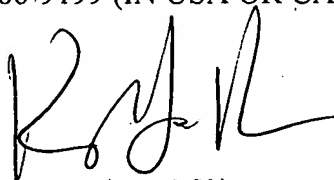
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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

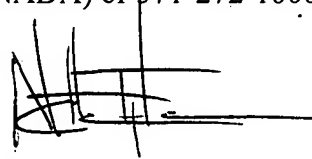
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan K. Tyler whose telephone number is 571-270-1584. The examiner can normally be reached on M-F 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on 571-272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



KING Y. POON
SUPERVISORY PATENT EXAMINER



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Examiner
Art Unit 2625